6/3,AB/13 (Item 4 from file: 34)
DIALOG(R)File 34: SciSearch(R) Cited Ref Sci


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OPTIMIZATION OF METHODS TO ACHIEVE MESSENGER-RNA-MEDIATED TRANSFECTION OF TUMOR-CELLS IN-VITRO AND IN-VIVO EMPLOYING CATIONIC LIPOSOME VECTORS
( Abstract Available )
Author: LU D; BENJAMIN R; KIM M; CONRY RM; CURIEL DT
Corporate Source: UNIV ALABAMA,CTR COMPREHENS CANC,WALLACE TUMOR INST,GENE THERAPY PROGRAM,1824 6TH AVE S,ROOM 620/BIRMINGHAM//AL/35294; UNIV ALABAMA,CTR COMPREHENS CANC,WALLACE TUMOR INST,GENE THERAPY PROGRAM/BIRMINGHAM//AL/35294; UNIV ALABAMA,DEPT CELL & MOLEC BIOL/BIRMINGHAM//AL/35294; UNIV ALABAMA,DEPT CELL & MOLEC BIOL/BIRMINGHAM//AL/35294; UNIV ALABAMA,DEPT PULM & CRIT CARE MED/BIRMINGHAM//AL/35294; UNIV ALABAMA,DEPT MED/BIRMINGHAM//AL/35294
Journal: CANCER GENE THERAPY , 1994 , V 1 , N4 ( DEC ) , P 245-252
ISSN: 0929-1903
Language: ENGLISH Document Type: ARTICLE
Abstract: Direct in vivo transfection of tumor nodules in situ via liposome-DNA complexes has been employed as a strategy to accomplish antitumor immunization. To circumvent the potential safety hazards associated with systemic localization of delivered DNA, the utility of mRNA transcript-mediated gene delivery was explored. Capped, polyadenylated mRNA transcripts encoding the firefly luciferase and Escherichia coil lacZ reporter genes were derived by in vitro transcription. Transfection of the human breast cancer cell line MDA-ME-435 in vitro was accomplished employing cationic liposome-mRNA complexes. Evaluation of a panel of cationic liposome preparations demonstrated significant differences in the capacity of the Various preparations to accomplish mRNA-mediated transfection. Quantitative evaluation of in vitro transfection demonstrated that target cells could be transfected at a high level of efficiency. The mRNA liposome-complexes were evaluated for in vivo transfection of tumor nodules in human xenografts in athymic nude mice. It could be demonstrated the liposome-mRNA complexes were comparable in efficacy to liposome-DNA complexes in accomplishing in situ tumor transfection. Thus, mRNA may be considered as an alternative to plasmid DNA as a gene transfer Vector for genetic immunopotentiation applications.

Dendritic cells pulsed with RNA are potent antigen-presenting cells in vitro and in vivo

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Journal: Journal of Experimental Medicine 184 ( 2 ): p 465-472 1996 1996
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Record Type: Abstract
Language: English

Abstract: Immunization with defined tumor antigens is currently limited to a small number of cancers where candidates for tumor rejection antigens have been identified. In this study we investigated whether pulsing dendritic cells (DC) with tumor-derived RNA is an effective way to induce CTL and tumor immunity. DC pulsed with in vitro synthesized chicken ovalbumin (OVA) RNA were more effective than OVA peptide-pulsed DC in stimulating primary, OVA-specific CTL responses in vitro. DC pulsed with unfractionated RNA (total or polyA+) from OVA-expressing tumor cells were as effective as DC pulsed with OVA peptide at stimulating CTL responses. Induction of OVA-specific CTL was abrogated when polyA+ RNA from OVA-expressing cells was treated with an OVA-specific antisense oligodeoxynucleotide and RNase H, showing that sensitization of DC was indeed mediated by OVA RNA. Mice vaccinated with DC pulsed with RNA from OVA-expressing tumor cells were protected against a challenge with OVA-expressing tumor cells. In the poorly immunogenic, highly metastatic, B16/F10.9 tumor model a dramatic reduction in lung metastases was observed in mice vaccinated with DC pulsed with tumor-derived RNA (total or polyA+, but not polyA-RNA). The finding that RNA transcribed in vitro from cDNA cloned in a bacterial plasmid was highly effective in sensitizing DC shows that amplification of the antigenic content from a small number of tumor cells is feasible, thus expanding the potential use of RNA-pulsed DC-based vaccines for patients bearing very small, possibly microscopic, tumors.

| Set | Items | Description |
|---|---|---|
| S1 | 18 | (TOTAL (3N) RNA) (S) TUMOR? (S) LIPOSOME? |
| S2 | 5 | RD (unique items) |
| S3 | 1437 | LIPOSOME? (3N) RNA |
| S4 | 98 | S3 (S) (TUMOR? OR CANCER OR CARCINOMA) |
| S5 | 34 | S4 NOT PY>1998 |
| S6 | 19 | RD (unique items) |
| S7 | 838 | (TOTAL (2N) TUMOR? (2N)RNA) |
| S8 | 837 | S7 NOT S1 |
| S9 | 333 | S8 NOT PY>1998 |
| S10 | 10 | S9 (S) TRANSFECT? |
| S11 | 4 | RD (unique items) |
| S12 | 4 | S9 (S) PULSED |
| S13 | 1 | RD (unique items) |

Bone marrow-generated dendritic cells pulsed with tumor extracts or tumor
RNA induce antitumor immunity against central nervous system tumors
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Bigner
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JOURNAL: Journal of Experimental Medicine 186 (7): p1177-1182 1997 1997
ISSN: 0022-1007
DOCUMENT TYPE: Article
RECORD TYPE: Abstract
LANGUAGE: English

ABSTRACT: Recent studies have shown that the brain is not a barrier to successful active immunotherapy that uses gene-modified autologous tumor cell vaccines. In this study, we compared the efficacy of two types of vaccines for the treatment of tumors within the central nervous system (CNS): dendritic cell (DC)-based vaccines pulsed with either tumor extract or tumor RNA, and cytokine gene-modified tumor vaccines. Using the B16/F10 murine melanoma (B16) as a model for CNS tumor, we show that vaccination with bone marrow-generated DCs, pulsed with either B16 cell extract or B16 total RNA, can induce specific cytotoxic T lymphocytes against B16 tumor cells. Both types of DC vaccines were able to protect animals from tumors located in the CNS. DC-based vaccines also led to prolonged survival in mice with tumors placed before the initiation of vaccine therapy. The DC-based vaccines were at least as effective, if not more so, as vaccines containing B16 tumor cells in which the granulocytic macrophage colony-stimulating factor gene had been modified. These data support the use of DC-based vaccines for the treatment of patients with CNS tumors.

9/3,AB/2 (Item 2 from file: 5)
DIALOG(R)File 5:Biosis Previews(R)


0010551421 BIOSIS NO.: 199699185481
Dendritic cells pulsed with RNA are potent antigen-presenting cells

in
vitro and in vivo
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JOURNAL: Journal of Experimental Medicine 184 (2): p465-472 1996 1996

ISSN: 0022-1007
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| Set | Items | Description |
|---|---|---|
| S1 | 6 | ((TOTAL (2N) RNA) (4N) TUMOR) (S) (LIPOSOM?) |
| S2 | 2 | RD (unique items) |
| S3 | 6 | ((TOTAL (3N) RNA)(4N)(TUMOR OR CANCER OR MELANOMA)) (S) LI-POSOM? |
| S4 | 2 | RD (unique items) |
| S5 | 0 | S2 NOT S4 |
| S6 | 1835 | (RNA (4N)(TUMOR OR MELANOMA OR CANCER)) (S) (VACCIN? OR I-MMUNIZ? OR IMMUNE?) |
| S7 | 861 | S6 NOT PY>1998 |
| S8 | 571 | RD (unique items) |
| S9 | 12 | S8 (S) (TOTAL (2N) RNA) |
| S10 | 559 | S8 NOT S9 |

Ashley et al. J. Exp. Med., 1997, 186(7): 1177 1182). Such responses were found to be equal to or more efficient than those elicited by peptide pulsed DCs (Boczkowski et al., J. Exp. Med., 1996, 184:465 472

The cationic liposomes used in the following experiments (unless otherwise indicated) consisted of DOTAP (1,2 dioleoyl-3-trimethylammonium-propane) and cholesterol mixed in a 1:1 molar ratio, dried down in round bottom tubes, then rehydrated in 5% dextrose solution (D5W) by heating at 50 °C for 6 hours, as described previously (Solodin et al., 1995, Biochemistry 34:13537-13544, incorporated herein by reference in its entirety).